

The author next investigates the acoustic relations between the actions of the glottis and that of the vocal pipe, and the acoustic effects of flexible membranous tubes on a column of air vibrating within it, and finds that the structure of the trachea and of the soft parts above and below the larynx is adapted to vibrate synchronously with any note that may be formed in the larynx. The falsetto voice may be produced either by the partial closing of the glottis, or by a nodal division of the vocal chords; the pitch of the sound in the production of this peculiar modification of the voice, being such that the column of air in the vocal tube is of the precise length requisite to vibrate in unison with the larynx. The inquiry is further extended to the sources of the various tones of the voice in singing, such as the *bass*, *tenor*, *contralto*, and *soprano*; together with their subdivisions of *barytone*, *mezzo-soprano*, and *soprano-sfogato*; and to the places which they occupy in the musical scale. Independently of the falsetto, the compass of the natural voice rarely exceeds two octaves; although in some cases, as in those of Malibran and Catalani, it may extend even beyond three. The voice in singing is modulated by the contraction or relaxation of the velum, uvula and fauces. The author lastly adverts to the attempts that have, at various times, been made by the Abbé Mical, Faber, Kratzenstein, De Kempelin, Willis, Wheatstone and others, to imitate articulate sounds by mechanism.

Having thus examined the human voice as resulting from the vibration of membranous ligaments, in obedience, first, to the laws of musical strings; secondly, to those of reeded instruments; and thirdly, to those of membranous pipes; he arrives at the conclusion, that the vocal organs combine, in reality, the actions of each of these instruments, and exhibit in conjunction, the perfect type of every one of them.

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June 18, 1846.

The MARQUIS OF NORTHAMPTON, President, in the Chair.

“The Electric Fluid.” By W. F. Stevenson, Esq., F.R.S.

The author denies the existence of two electric fluids, and maintains that all the phenomena are explicable on the hypothesis of a single fluid; which when present in a conducting body renders it positive, and in a non-conducting body, negative; but a body which is naturally a conductor, may, he asserts, be rendered otherwise, by changing its form.

“Observations of the Heights of the Thermometer and Barometer made at Lenham Lodge, near Maidstone, Kent, during the first nine days of the month of June 1846.” By George Hunsley Fielding, M.D., F.R.S.

On Sunday the 7th of June 1846, the thermometer in the shade rose to the extraordinary height of 94° Fahr., exceeding by one de-